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Srinivasan et al.

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(54) **SEAMLESS SWITCHING BETWEEN AN
AUTHORING VIEW AND A CONSUMPTION
VIEW OF A THREE-DIMENSIONAL SCENE**

(56) **References Cited**

U.S. PATENT DOCUMENTS

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2006/0170652 A1* 8/2006 Bannai G06F 3/011
345/156
2013/0314421 A1* 11/2013 Kim G09B 5/065
345/427

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(Continued)

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OTHER PUBLICATIONS

Freese, Peter, "Introducing Holographic Emulation," Retrieved from
blogs.unity3d.com/2016/09/29/introducing-holographic-
emulation/, Sep. 29, 2016, 5 pages. (Year: 2016).*

(Continued)

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(58) **Field of Classification Search**

CPC **G06T 19/006**

See application file for complete search history.

(57) **ABSTRACT**

A platform configured to operate in different modes so that
users can seamlessly switch between an authoring view and
a consumption view while creating a three-dimensional
scene is described herein. A first mode includes an authoring
mode in which an authoring user can add and/or edit content
displayed in a three-dimensional scene via a computing
device. The second mode includes a consumption mode in
which the authoring user can preview and/or share the
content displayed in the three-dimensional scene via a
head-mounted display device that is in some way connected
to and/or in communication with the computing device.
Consequently, the same platform (e.g., application) enables
the authoring user to toggle between the two different modes
while creating a three-dimensional scene that is part of an
experience.

19 Claims, 7 Drawing Sheets

